

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of) WT Docket No. 05-235
)
Amendment of Part 97 of the Commission's Rules)
To Implement WRC-03 Regulations Applicable to)
Requirements for Operator Licenses in the)
Amateur Radio Service)

TO: The Commission

COMMENTS OF ROLAND A. ANDERS

THIS COMMENTER

1. I am filing these comments in response to the *Notice of Proposed Rule Making and Order* ("Notice") in the heading Docket. My name is Roland A. Anders and I am license grantee of amateur station K3RA; a Commission-licensed amateur operator of over forty-eight years; and an Amateur Extra Class licensee for most of that period. By profession, I am an electrical engineer, and I am currently Chief Scientist for the Space Division of the Electronics Systems Sector of Northrop Grumman. I am also volunteer examiner ("VE") with the Laurel Amateur Radio Club Volunteer Examiner Coordinator (LARC-VEC); the LARC-VEC representative to the National Conference of VEC's Question Pool Committee; Vice President for Training of the Historical Electronics Museum Amateur Radio Club; a regular, unpaid instructor teaching preparation for the amateur radio examinations for over 25 years, both at local radio clubs and the local community college; a winner of the American Radio Relay League "Instructor of the Year Award"; long-time member of the Potomac Valley Amateur Radio Club (PVRC) contesting group; member of the PVRC Emergency Coordination committee; trustee of the Historical Electronics Museum Amateur Radio Club Station W3HEM; and an active operator on virtually all modes and bands allocated to the amateur service. With this background and experience in amateur radio, emergency communications, and the electronics industry, I have great interest in the future well being of our amateur service and its contribution to the public interest as delineated in the Basis and Purpose of the Amateur service in Part 97.1.

INTRODUCTION

2. In the Notice, the Commission states that maintaining a telegraphy requirement for the General Class License would not be in the public interest, and the Commission *tentatively* [word is the Commission's, italics are the commenter's] concludes that maintaining the telegraphy requirement for the

Amateur Extra Class is likewise not in the public interest. Arguments for and against the elimination of the telegraphy requirement are presented in the notice. It is not clear whether the Commission endorses all of these arguments against retention of the telegraphy requirement, nor does the Notice indicate all of the arguments which may have influenced its tentative position on the Extra Class license. However, the Notice cites several specific reasons for concluding that elimination of the requirement for Extra is advisable. These reasons can be summarized as follows: 1) Telegraphy has little value as an emergency communications mode as the amateur community no longer uses telegraphy because voice and digital modes are faster; 2) Even if there is value to the use of telegraphy in emergency communications, there is no requirement that amateur operators do provide emergency communications; 3) No other mode requires demonstration of ability, and that such special treatment of telegraphy in examination for the licenses is not warranted; 4) Given the fact that telegraphy operation is not required by the Commission's rules, and given that the international requirement for telegraphy ability has been dropped, Morse examination is no longer necessary; 5) One-time demonstration does not guarantee future proficiency; 6) Morse code ability is not a significant contributor to the amateur's ability advance the art.

While I can understand that the arguments presented by the Commission may justify eliminating the telegraphy requirement for the General License, I wish to bring additional information to the attention of the Commission which I believe strongly contradicts the conclusion that elimination of the telegraphy test completely from the amateur service is in the public interest. On the contrary, I urge the Commission to CONTINUE THE TELEGRAPHY REQUIREMENT FOR AN AMATEUR EXTRA CLASS LICENSE GRANT. In the following paragraphs I provide information for further consideration on each of the arguments for eliminating the Morse requirement. I believe this information clearly supports the conclusion that the Commission should retract its tentative conclusion regarding elimination of the Extra Class telegraphy requirement.

COMMENTS ON SPECIFIC COMMISSION POINTS

3. Comments on the argument that telegraphy has little value as an emergency communications mode because voice and digital modes are faster.

While it is true that the majority of local emergency communications on the amateur bands takes place on phone, and that digital modes are used frequently as well, I wish to point out that Morse code continues to provide a valuable alternative in the case of an emergency as long as a significant number of licensees are capable of using the mode. In an emergency such as a hurricane or flood, regular amateur antennas may be down and commercial power may be out. While local repeaters in some cases are protected by backup AC generators or UPS's, not all are so protected. In addition, these local communications systems are not useful for long range communications. Amateurs with Morse skill can go to low power battery operation

and get through on HF with minimal antennas due to the improved signal to noise ratio of the mode and ability to of skilled Morse operators to 'copy' in adverse interference conditions. Phone is much less effective under such conditions because it requires considerably more power to "get through" due to its wide bandwidth and higher required signal-to-noise ratio for intelligibility. Digital modes require computers and special interface electronics which are not likely to be on line during a severe emergency. Also, many of the digital modes are much more susceptible to noise and interference than Morse. For these reasons, under such adverse conditions a skilled CW operator can be much more effective than any phone operator.

Contrary to what one might think at first, telegraphy is not slower than phone. Speed cannot be sacrificed to accuracy; therefore, in emergency communications, phone transmissions are slowed down and words are spelled phonetically so that the receiving operator can "copy" the message accurately. Nor is Morse slower than some other "modern" modes--for instance, we have seen on National TV how Morse easily beats "instant messaging" by cell phone for speed. The Commission is sending the wrong message by eliminating Morse from all amateur licensing requirements by arguing that it has no place in modern emergency communications. This is far from true. On the contrary, Morse is invaluable "when all else fails" as occurred during 9/11. The Amateur Community is the ONLY source of Morse operators to take over when normal communications fail. It is the simplicity of our equipment and the skill of our operators that makes us effective in such situations, and Morse is the epitome of simplicity and ability to function when complex systems fail. Telegraphy recently has become less often used in emergency communications at least partly because the Commission has lowered the standards for demonstrating telegraphy ability for the licensees, thus the number of capable telegraphy operators is diminishing. Completely eliminating the telegraphy requirement will vastly accelerate that reduction in Morse-capable operators. The Commission should be encouraging Morse skill so that it is available in emergencies, not branding it as obsolete. While the requirement may be being eliminated internationally, it is in the interest of the citizens of the United States that the Commission continue to encourage radio amateurs to learn and use Morse telegraphy in order to preserve this important capability for use in case of a major natural disaster or other threat to national security.

4. Comments on the argument that, even if Morse telegraphy is advantageous in some emergency conditions, there is no requirement that amateur operators actually provide emergency communications.

Clearly the amateur rules do not *require* amateur operators to provide communications in an emergency. However, Commission Rules paragraph 97.1 (a) states the first basis and purpose of amateur radio to be:

(a) Recognition and enhancement of

the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications.

Neither this purpose nor any of the remaining four purposes are *required* of the radio amateur by the rules. For instance, the amateur is not required to advance the state of the art, promote international goodwill, or become part of the reservoir of operators and technical experts--but 97.1 calls upon the Commission to develop the rules with these purposes in mind. As stated above, emergency communications are enhanced by encouraging ability in Morse telegraphy, and maintaining the telegraphy requirement for the Extra Class licensee is in direct support of 97.1 (a) and clearly in the public interest.

5. Comments on the argument that no other mode requires demonstration of ability, and that such special treatment of telegraphy in examination for the licenses is not warranted.

It is not appropriate to demonstrate modes other than Morse because, unlike Morse, these other modes are generally not learned skills. Phone, for instance, requires no special skill to be demonstrated--anyone can learn in minutes to push the button and talk. While high speed keyboarding IS a learned skill, in the U.S. today the vast majority of people can at least "hunt and peck" at the rates necessary to carry on digital communications. An Amateur Licensee can quickly utilize these other modes, but without a grounding in the fundamentals of Morse telegraphy an operator cannot merely 'jump in'. It takes some effort to develop a 5 wpm capability at Morse, and it should be a goal of the prospective Amateur Extra licensee to develop that skill, since Morse code is a valuable asset in advancing the art and in emergency communication--not some arbitrary barrier to entry. In my experience those who practice several hours a week can develop the minimal 5 WPM ability in a month or two--not a huge effort for those desiring an Extra Class license. In a number of cases I have had student advance from no familiarity to 5 wpm in a few days. Those unwilling to devote the effort needed would still have access to almost all amateur privileges as General licensees. Part of the purpose of the Extra Class license apparently has been to incentivize the amateur to learn important skills. Morse Telegraphy is just such a skill, as I have discussed in other paragraphs of this comment.

6. Comment on the argument that elimination of the telegraphy examination is justified by the fact that 1) there is no requirement in the Commission's rules that the amateur licensee use telegraphy, and 2) that the international requirement for telegraphy ability has been dropped.

The argument that telegraphy operation is not *required* by the Commissions rules is not justification, in my opinion, for eliminating a test for ability in this important area. Amateurs are not required to use any of the privileges of their license, but they must demonstrate the necessary knowledge to be able to do so. While I can understand that the "General" amateur may not need capability with Morse, it seems unreasonable to award the title "Extra" (equivalent to "Expert", which is probably a more appropriate name) to a radio amateur who has no ability in Morse at all. Likewise, the Commission should not be swayed by actions of other countries in eliminating the telegraphy requirement--such actions put these countries in an inferior position, and it would not be wise for the United States to join them.

7. Comments on the argument that one time demonstration of proficiency does not guarantee future proficiency

With respect to one-time demonstration guaranteeing future proficiency, telegraphy is no different from any other knowledge which is required to be demonstrated on the license examinations. For instance, the fact that a licensee has memorized certain rules and regulations at the time of examination does not guarantee future knowledge of this information. There is nothing short of regular re-examination which can guarantee continued familiarity with any of the material (and I am not recommending that!). However, experience shows that, should the licensee need that knowledge again, he or she will likely have a shorter learning time after having demonstrated familiarity on an earlier test. In my long experience teaching the Morse code, I have found that once a minimal skill level is demonstrated, the skill "comes back" rapidly. When skill beyond the minimum familiarity is demonstrated, it is VERY quickly relearned. I have taught people who learned the code in the military 30 or more years earlier, and they are able to regain their original speed in just a few sessions of practice. Also, in general, the material required on the examinations provides a basis for developing further knowledge in important areas. Passing a 5 WPM code test is, similarly, a demonstration of the fundamental skill needed to be able to be able to achieve proficiency--it is NOT a demonstration of proficiency.

8. Comments on the argument that Morse code ability is not a significant contributor to the amateur's ability to advance the art.

Many examples illustrate that Morse code knowledge is a very important contributor to the advancement of the communications art. For instance, many new propagation modes have been discovered by radio amateurs using Morse because of its vastly higher signal-to-noise ratio compared to other modes given the same signal strength. Today on the VHF, UHF, and microwave bands, many contacts under rare propagation conditions are made in Morse where voice and other techniques fail. An amateur without Morse skill cannot participate in those experimental contacts. While there has been research in the utilization of advanced digital techniques for some of these propagation modes, these approaches

require prearranged contacts with long integration times to improve signal-to-noise, and they cannot take the place of Morse for contacts-of-opportunity which may arise during extremely short "openings". Likewise, Morse is universally used for the many beacons amateurs have put in place to monitor and study propagation. Morse is ideally suited for this purpose as it can be "copied" when voice cannot. Amateurs with no Morse skill cannot copy the location of these beacons. Morse is also the mode of choice for those exploring extremely low power contacts. There is an active group of amateurs who seek to extend the distance per watt achieved (miles/mW). This activity drives the participants to improve antennas and knowledge of propagation, and these folks routinely use Morse code for their transmissions. These are just a few of the ways that Morse is used to advance the state of the art, and assuredly more applications will be found by the innovation typical of the Amateur Service throughout its history--as long as Morse is encouraged in the community.

While there is software and hardware available for "automatic" copying of Morse code, in my experience these approaches are clumsy to use and they do not perform well in poor signal-to-noise ratio environments--the very conditions in which Morse is most effective. The Extra Class Amateur should be required to demonstrate the fundamental ability to copy Morse telegraphy "by ear" in order to participate in such advances in the art as described above.

OTHER COMMENTS IN SUPPORT OF RETAINING THE TELEGRAPHY REQUIREMENT FOR THE EXTRA CLASS LICENSE

9. Eliminating the Element 1 test for all license classes is being interpreted by many as a message that the Commission considers Telegraphy a "niche" mode for recreation only and that it plays no important role in amateur radio. In fact, the Commission has made statements in the subject Notice that some are interpreting in that light. For instance, as the representative of the LARC VEC to the NCVEC Question Pool Committee, some have approached me with the argument that since the Commission is taking the position that Morse is merely a recreational mode with no value in emergency communications or advancement of the art, the next step is to remove questions about the CW mode from exams. They wonder whether we should remove all CW questions such as bandwidth occupied, keying techniques, RST reports, chirp and key clicks, keying circuits, CW receiving techniques, etc. etc. Clearly, we should not.

Likewise, I believe the Commission is sending the wrong message to the Amateur Community when it cites that it is removing the Morse requirement partially because the majority of comments support the position that Morse is obsolete. The number of comments received for and against a Morse requirement may not represent the proportion of amateur licensees who wish to preserve the mode. However, if we accept the numbers as accurate for the sake of argument, can a mode be obsolete when a large minority say it isn't? In any event, sheer numbers responding should not play an important part in deciding the public interest;

rather, the Commission has the responsibility to *guide* the service in the public interest. Retaining the telegraphy requirement for Extra sends the proper message that the public interest is served by maintaining Morse telegraphy as a vital part of amateur radio.

10. The argument that administering of Element 1 is an onerous burden to the VE's is not accurate in my view. All current VE's have had the capability to administer Morse tests for many years; and with the advent of widely available software, computer-generated testing has become quite simple. Today, "obsolete" laptops which are more than adequate for such testing are readily available for little or no cost. In this commenter's experience as a VE for ten years, there is NO justification that Morse testing be eliminated to alleviate some perceived excessive burden on the VE community.

11. I believe the above arguments provide strong support for the value of telegraphy in advancing the basis and purposes of amateur radio as called out in the Commission's Rules. Independent of these arguments, Morse telegraphy continues to play an important role in amateur radio. Listen to the ham bands during any of the CW contests, and you will here thousands of amateurs world-wide communicating in Morse. Morse is not dead, and it is not a minor aspect of amateur radio followed by a small minority. It is not reasonable to award the title of "Extra Class" or "Expert" to an operator having no capability in this important mode utilized by a large portion of the amateur service population. Retaining the Morse telegraphy requirement is consistent with the other requirements for the Extra Class licensee who is called upon to be a leader in the advancement of the purposes of the Amateur service.

SUMMARY

12. On the whole, the Commission is to be congratulated on the excellence of the *Notice*. The Commission has always shown that they have the security and interests of the public foremost in mind when they modify the rules. The Commission has the responsibility to *guide* the amateur service in the public interest. I believe for the reasons stated above that the public interest and the purposes for the Amateur Radio Service as set forth in Part 97.1 will best be served by maintaining the requirements for Morse code testing for the Extra Class license.

Respectfully submitted,

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